

DEMOGRAPHIC SURVEILLANCE SYSTEM- TEKNAF

134

VITAL EVENTS AND MIGRATION, 1983

REPORT PREPARED BY:

Mizanur Rahman
Saker A. Chowdhury
Yakub Patwari
Sajal K. Saha
Bogdan Wojtyniak
M. Mujibur Rahaman

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INTERNATIONAL
CENTRE FOR
DIARRHOEAL DISEASE
RESEARCH,
BANGLADESH

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Mizanur Rahman¹

Saker A. Chowdhury²

Yakub Patwari³

Sajal K. Saha⁴

Bogdan Wojtyniak⁵

M. Mujibur Rahaman⁶

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International Centre for Diarrhoeal Disease Research, Bangladesh
GPO Box 128, Dhaka 2, Bangladesh

-
- 1 Demographer-Statistician
 - 2 Data Processing Assistant
 - 3 Senior Field Research Officer
 - 4 Data Processing Assistant
 - 5 Scientist
 - 6 Senior Scientist

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PREFACE

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is an autonomous, international, philanthropic, non-profit centre for research, education, training and clinical service. The Centre is derived from the Cholera Research Laboratory (CRL). Its activities are to undertake and promote study, research and dissemination of knowledge in diarrhoeal diseases and the directly related subjects of nutrition and fertility—with a view to developing improved health care methods and to prevent and control diarrhoeal diseases and improve public health programmes, especially in developing countries. The ICDDR,B issues an annual report, working papers, scientific reports, special publications, monographs, theses, dissertations, and a bi-monthly newsletter, which demonstrates the type of research activities currently in progress. The views expressed in these papers are those of the authors, and do not necessarily represent the views of the ICDDR,B. They should not be quoted without the authors' permission.

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Summary

Births, deaths, marriages, divorces and migration have been registered in Teknaf, a rural area of Bangladesh by the Demographic Surveillance System (DSS) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) through monthly house-to-house visits of field workers since 1976. This report presents selected tabulations of numbers and rates of the above mentioned events registered in 1983. This is the fourth volume of a series of scientific reports on Teknaf DSS.

In the middle of 1983 there were 64379 persons living in the DSS area of whom 32309 were males yielding a sex ratio of 100.7 males to 100 females. Although the sex ratio at birth in Teknaf is around 106 and female mortality is higher than that of males, the lower number of males in the overall population is related to the substantially higher positive balance of female migration than males. Crude birth and death rates were 53.4 and 14.7 per 1000 respectively yielding a very high growth rate of 3.9%; if this rate of growth persists, the population will double every 18 years.

The overall mortality level was moderate with a very high rate of infant mortality (154 per 1000 live births). Life expectancy at birth was 54.6 years for males and 53.6 for females. Life expectancy at age 5 was 62.5 and 60.8 years for males and females respectively. Females experienced higher mortality rate than males in almost all ages after their first birth day. The causes of death diagnosed by physician on the basis of reported signs and symptoms preceding death showed that tetanus was the major killer of infants followed by congenital malformations and birth related problems and respiratory diseases. For children between age 1 and 4, respiratory illness, malnutrition and diarrhoea were the major causes of death.

The level of fertility in Teknaf was remarkably high. Age schedule of fertility indicated that a woman bears on average seven and a half children during her reproductive life. Net

reproduction rate was 2.8 meaning that every woman will be replaced by about 3 daughters who would be expected to survive for reproduction in the next generation.

The marital life of the people of Teknaf begins early; mean age at first marriage was 16.6 and 22.5 for females and males respectively. Seventeen percent of females and 23.5% of males were married before reaching ages 15 and 20 respectively. More than 90% of female and over 95% of male marriages had taken place before their ages of 20 and 30 years respectively. There were about 31 divorces registered per 100 marriages in 1983. About half the divorces took place within the first year of married life.

Total in- and out-migration rates were 24.5 and 21.8 per 1000 population respectively and they were higher for males than for females. Males aged 20 to 39 years and females 10 to 29 years were the most mobile groups. The majority of male out-migrants left to work abroad, often accompanied by their families. Marriage and marital disruption were important causes of movement for females. There was a substantial movement of people across the Burmese border and in the DSS area. There were more than twice as many immigrants as emigrants.

Distinct seasonal patterns of almost all demographic events were seen. There were more births and deaths during October through January than in other months, and May and June were the months when about 40% of the marriages took place in 1983. In-migration of males as well as females had two distinct peaks—one in June and the other in September and October. Male out-migration remained concentrated during August and September whereas female out-migration did not show any distinct pattern.

Examining the demographic trends in Teknaf, it was observed that the overall fertility and mortality levels and thus the growth rate in 1983 were similar to those of previous years. Infant mortality rates fluctuated over the past 8-year period reaching the highest level in 1983. The levels of migration were slightly lower in 1982 and 1983 than in previous years.

There were a number of differences between the demographic characteristics of the Teknaf DSS population and those of Matlab DSS (a rural area in central-south Bangladesh). In Teknaf, fertility and infant mortality were higher and mortality after the first year of life was lower than those seen for Matlab. Females experienced higher mortality than males in both areas but higher mortality figures were much more pronounced in Matlab than in Teknaf. The Teknaf brides and grooms married at younger ages than their Matlab counterparts. The incidence of divorce was twice as high in Teknaf as in Matlab. Matlab migrants most often went to other areas within the country whereas the majority of out-migrants leaving Teknaf went on jobs abroad. The significant correlates of the demographic processes in Teknaf area and reasons for the differences between Matlab and Teknaf are currently being explored.

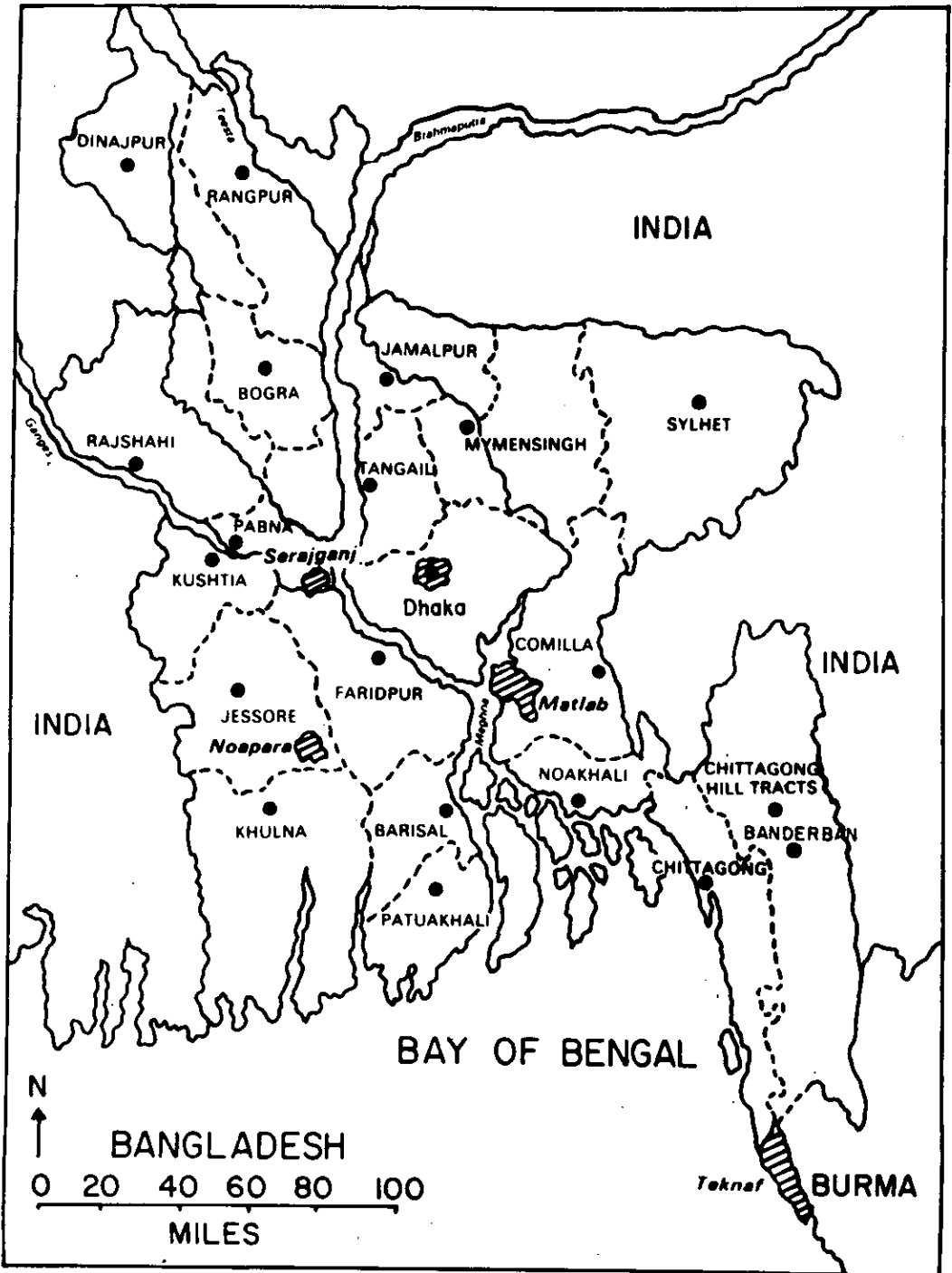
CHAPTER 1

INTRODUCTION

The Demographic Surveillance System (DSS) in Teknaf (Fig. 1.1 and 1.2 show the locations of Teknaf and surveillance area) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) routinely collects information on vital events (births, deaths and marriages) and migration originally in 5, and since 1982, in 6 villages. This volume presents basic tabulation of selected demographic events in the calendar year 1983 and is organised as follows: Introduction, Births, Deaths, Marriage and Divorce, and Migration. Brief notes are provided at the beginning of each chapter to make the tables self-explanatory.

An overview of the demographic rates in 1983 compared with those of previous years is given in Table 1.1. The DSS population has been experiencing moderate mortality, rather high fertility and thus a high growth rate. The infant mortality rate was considerably higher in 1983 than in previous years. Out-migration rates were lower in 1982 and 1983 than before.

A summary of the registered events and age structure of the population is presented in Tables 1.2 and 1.3 respectively. The mid-year population refers to July 1, 1983 and the procedure of calculation is briefly described in Appendix A. An additional village - Subrang - has been included in the DSS since the census of 1982; the present volume therefore, contains the results of six villages (Fig. 1.2).



Key:  study areas

Fig. 1.1: Bangladesh Map Showing the Location of Teknaf and Other Study Areas of ICDDR,B

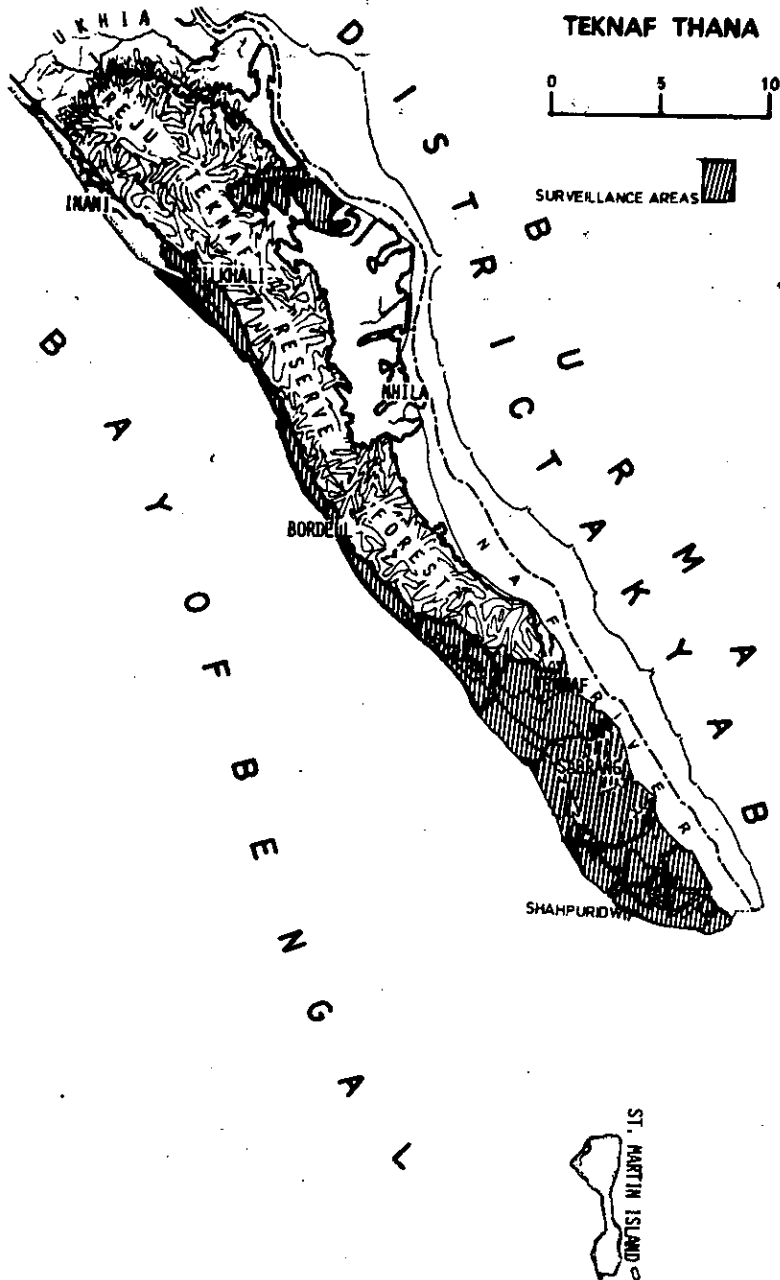


Fig. 1.2: Teknaf Map Showing the Location of the Surveillance Villages

Table 1.1: Demographic Characteristics of Teknaf Population,
1976-1983

Rates (per 1000 population)	1976	1977	1978	1979	1980	1981	1982	1983
Death	14.9	15.8	14.7	15.9	12.8	14.2	13.6	14.7
Infant mortality*	128.6	147.3	133.0	142.7	121.8	139.5	118.6	153.8
Child mortality (1-4)	23.4	12.2	16.8	16.9	13.7	14.9	10.6	12.3
Birth	47.1	52.1	45.1	55.6	52.4	51.5	54.2	53.4
Total fertility**	7.3	8.1	6.7	8.1	8.1	7.7	7.9	7.5
In-migration	17.6	28.9	37.4	28.9	30.9	26.3	23.3	24.5
Out-migration	17.1	29.5	29.9	30.0	31.4	33.3	24.0	21.8
Natural increase (%)	3.2	3.6	3.0	4.0	4.0	3.7	4.1	3.9
Growth (%)	3.3	3.6	3.8	3.9	3.9	3.0	4.0	4.2

*Per 1000 live births.

**Per woman.

Table 1.2: Mid-year Population, Events Registered and
Population Change in 1983

	Number	Rate per 1000 population
Total population mid-year 1983	64379	-
<u>Events registered:</u>		
Births	3440	53.4
Deaths (all ages)	947	14.7
Infant deaths	529	153.8*
In-migration	1578	24.5
Out-migration	1404	21.8
Marriages	1040	16.1
Divorces	325	312.5**
<u>Population change:</u>		
Net migration	182	2.8
Natural increase	2493	38.7
Net increase	2667	41.4

*Per 1000 live births

**Per 1000 marriages

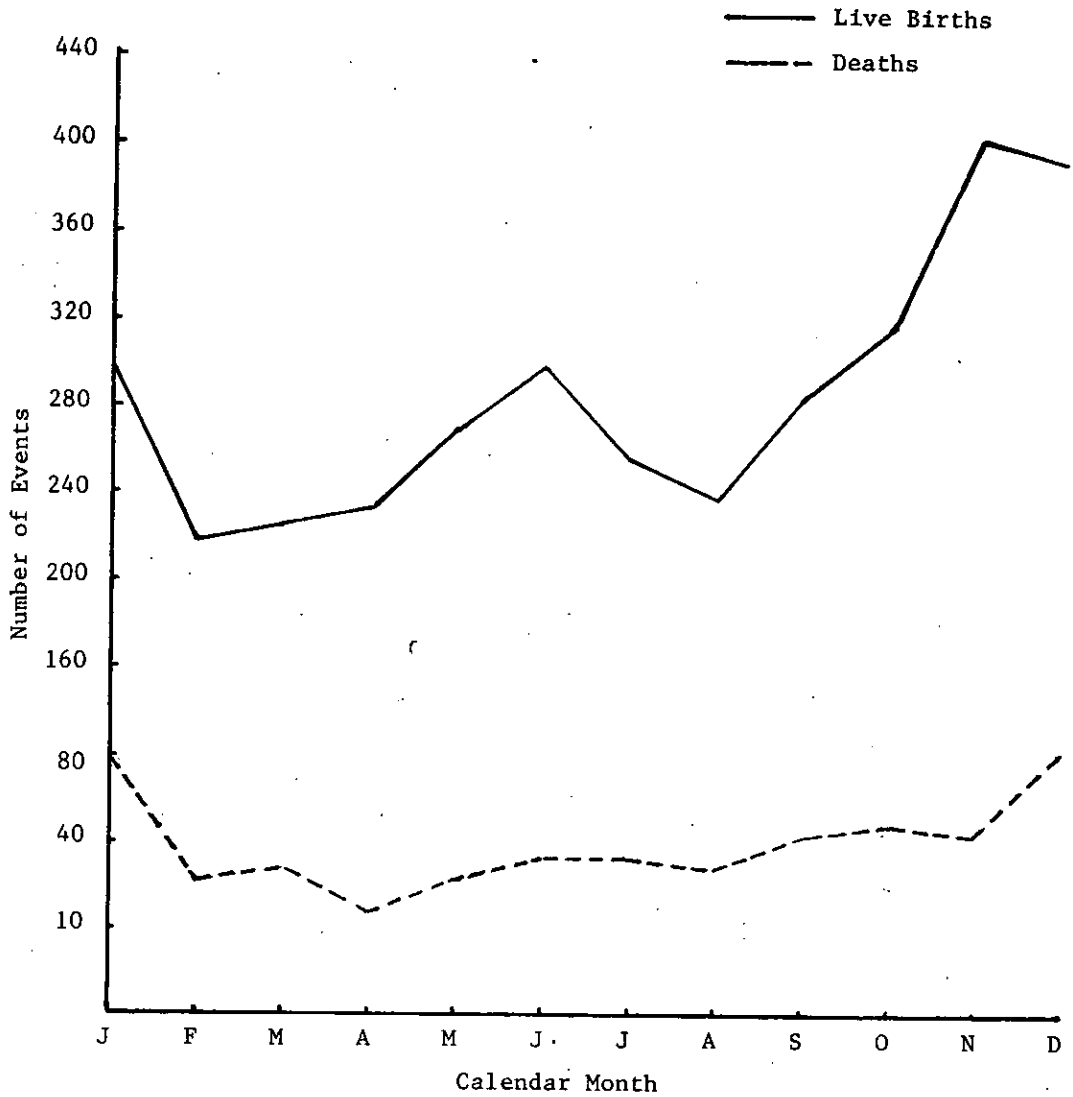


Fig. 1.3: Live Births and Deaths by Calendar Month, 1983

Table 1.3: Mid-year Population by Age and Sex, 1983

Age (year)	Number			Percent			M/F x 100
	Both sexes	Males	Females	Both sexes	Males	Females	
All ages	64379	32309	32070	100.0	100.0	100.0	100.7
0	2845	1443	1402	4.4	4.5	4.4	102.9
1	2718	1387	1331	4.2	4.3	4.1	104.2
2	2677	1361	1316	4.2	4.2	4.1	103.4
3	2656	1356	1300	4.1	4.2	4.0	104.3
4	2376	1199	1177	3.7	3.7	3.7	101.9
5-9	8193	4161	4032	12.7	12.9	12.6	103.2
10-14	9550	4876	4674	14.8	15.1	14.6	104.3
15-19	7660	3735	3925	11.9	11.6	12.2	95.1
20-24	5162	2554	2608	8.0	7.9	8.1	97.9
25-29	4317	1932	2385	6.7	6.0	7.4	81.0
30-34	3530	1731	1799	5.5	5.3	5.6	96.2
35-39	3161	1640	1521	4.9	5.1	4.7	107.8
40-44	2172	1121	1051	3.4	3.5	3.3	106.7
45-49	2162	1060	1102	3.4	3.3	3.4	96.2
50-54	1437	733	704	2.2	2.3	2.2	104.1
55-59	1566	807	759	2.4	2.5	2.4	106.3
60-64	788	430	358	1.2	1.3	1.1	120.1
65-69	759	416	343	1.2	1.3	1.1	121.3
70-74	296	166	130	0.5	0.5	0.4	127.7
75-79	202	115	87	0.3	0.3	0.3	132.2
80 & above	152	86	66	0.2	0.2	0.2	130.3

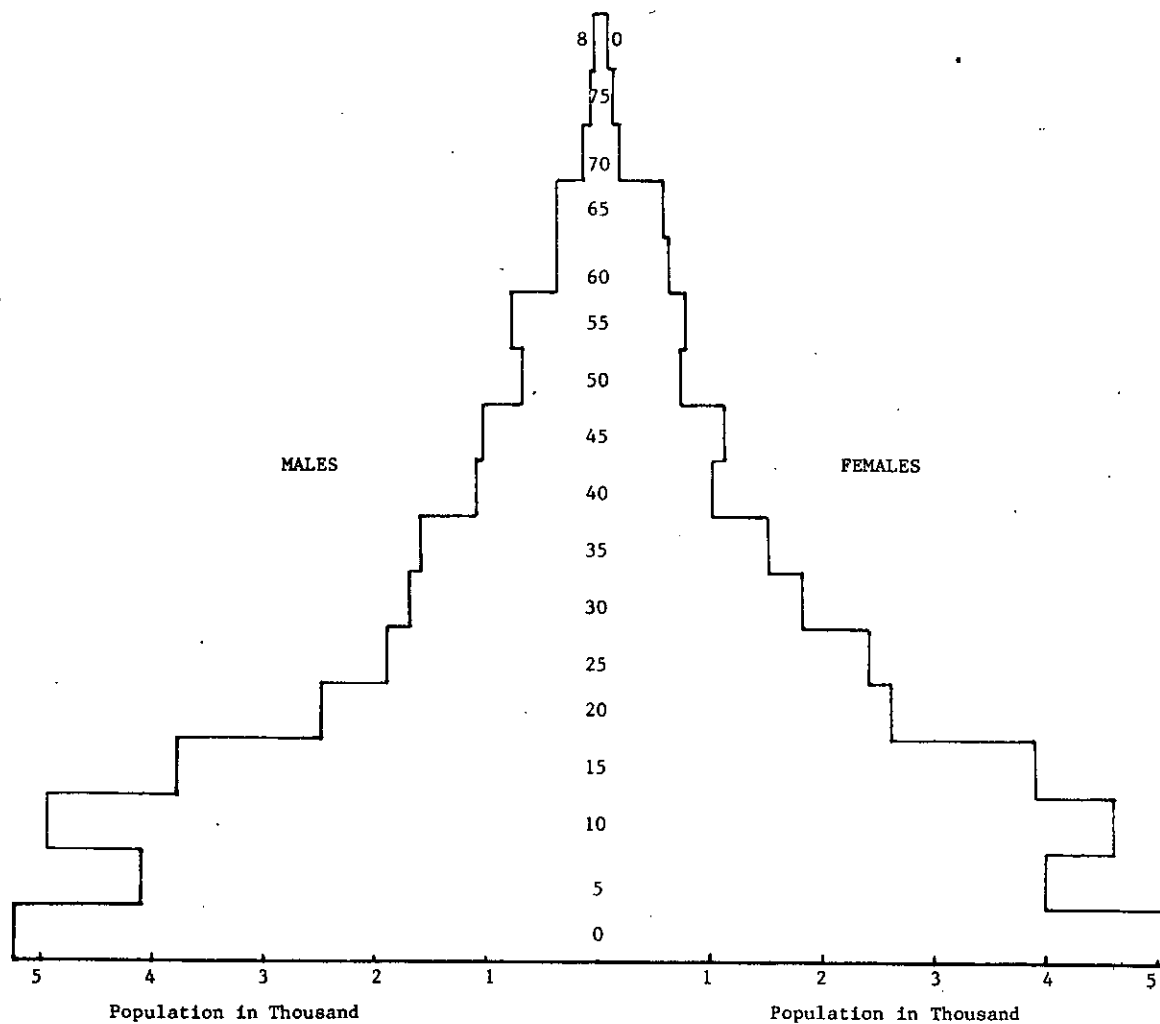


Fig. 1.4: Age Pyramid of the 1983 Mid-year Population by Sex

CHAPTER 2

DEATHS

Number of deaths (Table 2.1), rates (Table 2.2), causes of death (Table 2.4 & 2.5) and life tables (Table 2.3 and Fig. 2.1 and 2.2) are presented in this chapter. Appendix B shows the formulae used in constructing the life tables. The Health Assistants (HA) record signs and symptoms leading to death reported by the relatives of the deceased. A physician makes a diagnosis of cause of death on the basis of the description given by HA and by further interviewing the relatives of the deceased when necessary.

Table 2.1: Deaths by Age and Sex, 1983

Age at death (year)	Both sexes	Males	Females
All ages	947	473	474
Under 1	529	290	239
Under 1 mo	313	182	131
1-11 mo	216	108	108
1-4	128	54	74
5-9	17	7	10
10-14	9	3	6
15-19	18	6	12
20-24	26	9	17
25-29	18	4	14
30-34	18	5	13
35-39	19	9	10
40-44	6	4	2
45-49	16	7	9
50-54	19	8	11
55-59	20	11	9
60-64	26	16	10
65-69	36	15	21
70-74	12	8	4
75-79	12	7	5
80 & above	18	10	8

Table 2.2: Death Rates (per 1000 population) by
Age and Sex, 1983

Age (year)	Both sexes	Males	Females
All ages	14.7	14.6	14.8
Under 1	153.8	166.8	140.5
Under 7 days	51.5	63.3	39.4
7-28 days	36.9	36.8	37.0
29 days - 11 mo	65.4	66.7	64.1
1	23.5	18.7	28.5
2	11.6	8.8	14.4
3	7.5	6.6	8.5
4	5.5	5.8	5.1
5-9	2.1	1.7	2.5
10-14	0.9	0.6	1.3
15-19	2.3	1.6	3.1
20-24	5.0	3.5	6.5
25-29	4.2	2.1	5.9
30-34	5.1	2.9	7.2
35-39	6.0	5.5	6.6
40-44	2.8	3.6	1.9
45-49	7.4	6.6	8.2
50-54	13.2	10.9	15.6
55-59	12.8	13.6	11.9
60-64	33.0	37.2	27.9
65-69	47.4	36.1	61.2
70-74	40.5	48.2	30.8
75-79	59.4	60.9	57.5
80 & above	118.4	116.3	121.2

*Numbers of live births in 1983 were taken in the denominators in calculating all the infant mortality rates (<1 yr., <7 days, 7-28 days & 29 days-11 mo.)

Table 2.3: Abridged Life Tables by Sex Based on Mortality Rates of 1983

Age (year)	Both sexes			Males			Females		
	$1000 \frac{q_x}{n l_x}$	l_x	e_x^o	$1000 \frac{q_x}{n l_x}$	l_x	e_x^o	$1000 \frac{q_x}{n l_x}$	l_x	e_x^o
0	153.8	100000	54.6	166.8	100000	55.6	140.5	100000	53.6
1	23.2	84620	63.5	18.5	83320	65.7	28.1	85950	61.4
2	11.5	82654	64.0	8.8	81776	66.0	14.3	83534	62.1
3	7.5	81701	63.7	6.6	81059	65.6	8.5	82340	62.0
4	5.5	81090	63.2	5.8	80526	65.0	5.1	81643	61.5
5	10.4	80645	62.5	8.5	80060	64.4	12.4	81228	60.8
10	4.5	79802	58.2	3.0	79382	59.9	6.5	80218	56.6
15	11.4	79444	53.4	8.0	79144	55.1	15.4	79698	51.9
20	24.7	78535	49.0	17.4	78513	50.5	32.0	78471	47.7
25	20.8	76594	45.2	10.4	77150	46.3	29.1	75959	44.2
30	25.2	75001	41.1	14.4	76344	41.8	35.4	73748	40.4
35	29.6	73111	37.1	27.2	75244	37.4	32.5	71137	36.8
40	13.9	70948	33.1	17.9	73201	33.3	9.5	68825	33.0
45	36.4	69961	28.6	32.5	71894	28.9	40.2	68174	28.2
50	64.0	67416	24.6	53.2	69557	24.8	75.3	65431	24.3
55	62.1	63099	21.0	65.9	65860	21.0	57.9	60507	21.1
60	153.0	59178	17.3	170.9	61519	17.3	130.9	57004	17.2
65	212.8	50122	14.9	166.2	51007	15.3	266.4	49543	14.4
70	184.7	39457	13.2	216.0	42528	12.8	143.5	36345	13.7
75	259.6	32171	10.6	265.3	33342	10.7	252.4	31128	10.6
80	1000.0	23820	8.4	1000.0	24498	8.6	1000.0	23273	8.3

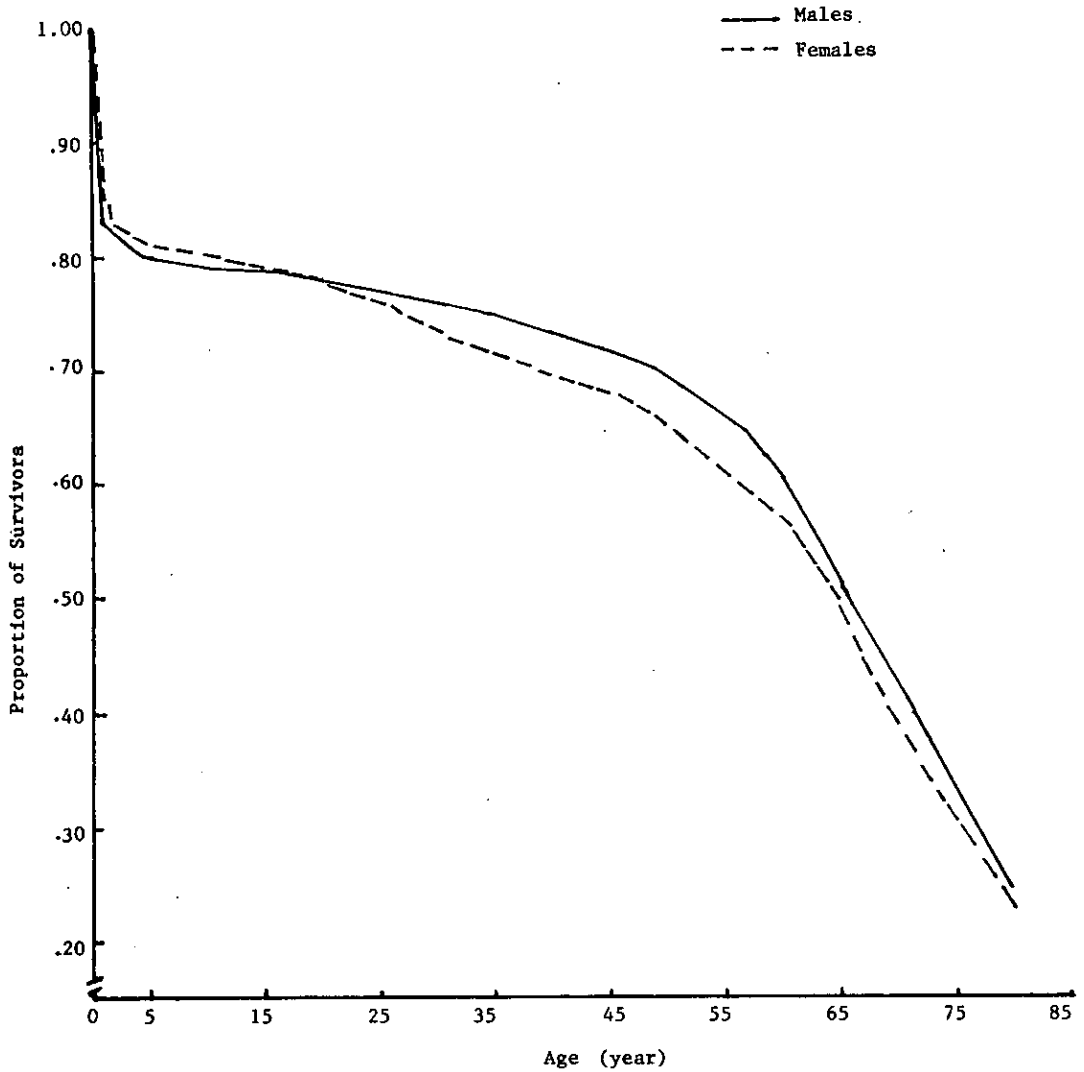


Fig. 2.1: Proportion of Survivors from Birth to a given Age by Sex Based on Mortality Rates of 1983

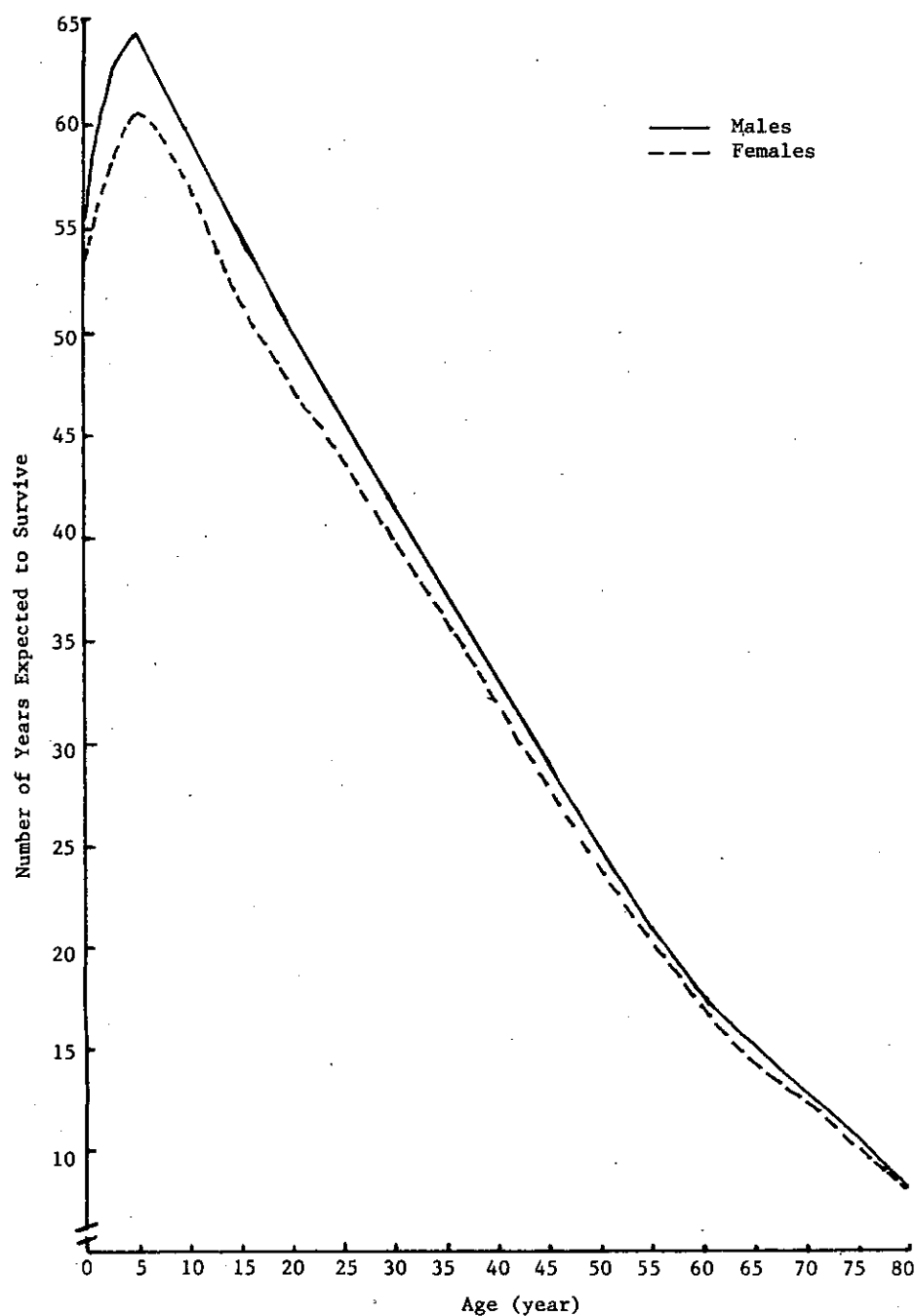


Fig. 2.2: Expectation of Life by Age and Sex Based on Mortality Rates of 1983

Table 2.4: Deaths by Cause and Age, 1983

Cause*	All ages	Age (year)				
		Under 1	1-4	5-14	15-44	45 & above
All causes	947	529	128	26	105	159
Pneumonia	105	60	24	2	4	15
Measles	4	2	1	1	-	-
Tetanus	149	142	1	1	5	-
Fever	49	15	12	4	10	8
Suicide	2	-	-	-	2	-
Diarrhoea, Acute	47	23	13	5	2	4
Diarrhoea, Chronic	4	2	-	-	1	1
Dysentery, Acute	11	8	1	-	2	-
Dysentery, Chronic	2	2	-	-	-	-
Delivery complications	14	4	-	-	10	-
Whooping cough	9	3	6	-	-	-
Malnutrition	58	24	22	1	3	8
Drowning	19	1	15	1	2	-
Snake bite	1	1	-	-	-	-
Tuberculosis	13	1	-	-	7	5
Rabies	3	-	-	1	2	-
Inability to suck	59	58	1	-	-	-
Prematurity	37	37	-	-	-	-
Birth injury	17	16	1	-	-	-
Old age	6	-	-	-	-	6

Cont'd... table 2.4

Cause	All ages	Age (year)				
		Under 1	1-4	5-14	15-44	45 & above
Ulcer	12	-	-	-	4	8
Streptococcal infection	1	-	-	-	-	1
Anaemia	1	-	-	-	1	-
Nephrities	3	-	-	1	2	-
Asthma	13	-	-	1	-	12
Cardio Vascular Attack	9	-	1	-	2	6
Accidental death	20	10	-	1	4	5
Nephrities with malnutrition	1	-	-	1	-	-
Typhoid	1	-	-	-	1	-
Chicken pox	1	1	-	-	-	-
Paralysis	2	-	-	-	-	2
Cancer	2	-	-	-	1	1
Other gastroenterities	2	1	-	-	-	1
Failure of breast-feeding	2	2	-	-	-	-
Bronchities, Chronic	2	-	1	-	-	1
Abdomen pain, Acute	12	6	3	-	-	3
Epilepsi	2	1	-	1	-	-
Congestive Cardiac Failure	3	-	-	-	1	2
Oral infection through ulcer, etc.	2	1	-	-	1	-

Cont'd... table 2.4

Cause	All ages	Age (year)				
		Under 1	1-4	5-14	15-44	45 & above
Meningitis	5	3	1	-	-	1
Septicemia	4	2	-	1	-	1
Pemphigus neonatorum	3	3	-	-	-	-
Intestinal obstruction	2	1	1	-	-	-
Hypovolaemic shock	5	-	1	-	3	1
Heart disease	32	1	-	1	8	22
Pre-eclampsia	2	-	-	1	1	-
Bronchopneumonia	57	43	12	1	-	1
Tumour	1	-	-	-	-	1
Hypertensive stroke	14	-	-	-	-	14
Corpulmonale	4	-	-	-	-	4
Shock	4	-	1	-	2	1
Cirrhosis of liver	2	-	-	-	1	1
Not known and others	112	55	10	1	23	23

*The causes are listed in ascending order of the code numbers.

Table 2.5: Distribution of the Causes of Infant Deaths
by Age, 1983

Cause	Under 1 year	Under 7 days	7-28 days	29 days - 11 months
All causes	99.9	100.0	100.0	100.0
Birth associated*	20.7	49.1	13.3	2.6
Tetanus	26.7	33.9	53.5	6.2
Nutritional deficiency**	4.5	-	0.9	10.1
Diarrhoeal diseases+	6.6	-	-	15.4
Respiratory diseases++	20.1	0.6	18.1	36.6
Measles	0.4	-	-	0.9
Fever (all types)	3.0	-	1.6	6.2
Accidental deaths	1.9	-	3.9	2.2
Others and unknown	16.0	16.4	8.7	19.8
Number	529	177	127	225

*Prematurity/congenital deformity, birth injury, inability to suck, etc.

**Malnutrition/anaemia/sore mouth

+Diarrhoea/dysentery/acute gastroenteritis

++Pneumonia/asthma/whooping cough

Table 2.6: Deaths by Sex and Calendar Month, 1983

Month	Both sexes	Males	Females
All months	947	473	474
January	120	57	63
February	61	30	31
March	67	31	36
April	47	23	24
May	63	32	31
June	73	34	39
July	73	41	32
August	69	32	37
September	81	43	38
October	87	50	37
November	84	40	44
December	122	60	62

CHAPTER 3

BIRTHS

Number of births, still births and miscarriages and fertility rates are presented in this chapter. A live birth is an outcome of pregnancy irrespective of duration of gestation which shows any evidence of life. An outcome (Table 3.1) is said to be still birth if the gestation period is more than 7 months or a miscarriage if the pregnancy is terminated within 7 months of gestation but without any evidence of life. The mean number of (a) surviving children, (b) children ever born, and (c) total pregnancies was based on the numbers reported by their mothers. The present birth number is included in the number of children or pregnancies.

Table 3.1: Numbers and Rates of Pregnancy Outcomes
by Type, 1983

Type of pregnancy outcome	Number	Rate*	Rate**
Total pregnancies	3773	-	-
Live birth pregnancies***	3405	-	902.5
Male births	1739	-	-
Female births	1701	-	-
Foetal wastage pregnancies	368	108.1	97.5
Early (miscarriages)	178	52.3	47.2
Late (still births)	190	55.8	50.4
Twin birth pregnancies	44	-	-
Live birth pregnancies	42	12.3	11.1
Two live births	35	-	-
One live births	7	-	-
Still birth pregnancies	1	0.3	0.3

*Per 1000 live birth pregnancies.

**Per 1000 total pregnancies.

***Male and female births do not add to total live birth pregnancies because of twins.

Table 3.2: Age Specific Fertility Rates and Reproduction Indices, 1983

Age group (year)	Number of live births	Fertility rate (per 1000 women)
All (15-49)	3440	239.0
15-19*	847	215.8
20-24	835	320.2
25-29	768	322.0
30-34	507	281.8
35-39	325	213.7
40-44	105	99.9
45-49**	53	48.1
Total Fertility Rate	7.5	
Gross Reproduction Rate	3.7	
Net Reproduction Rate	2.8	

*Thirty four births which occurred to mothers below age 15 were included in this group.

**Eight births which occurred to mothers of age 50 and above were included in this group.

Table 3.3: Distribution of Mothers Who Had Live Births in 1983 by
Age and Number of Children Ever Born Alive

Age (year)	All	Number of children ever born alive										Mean
		1	2	3	4	5	6	7	8	9	10+	
All ages	3405	642	538	520	406	357	289	217	165	117	154	4.1
Under 15	34	34	-	-	-	-	-	-	-	-	-	1.0
15-19	805	472	252	69	10	2	-	-	-	-	-	1.5
20-24	825	113	217	298	138	50	6	-	3	-	-	2.7
25-29	754	15	44	109	189	182	125	63	20	5	2	4.7
30-34	500	2	16	29	52	89	105	86	62	33	26	6.2
35-39	323	2	6	13	12	24	44	53	57	45	67	7.7
40-44	109	1	-	-	4	4	7	11	19	22	41	9.0
45 & above	55	3	3	2	1	6	2	4	4	12	18	8.0

Table 3.4: Distribution of Mothers Who Had Live Births in 1983 by
Age and Number of Pregnancies

Age (year)	Number of pregnancies												Mean
	All	1	2	3	4	5	6	7	8	9	10	11+	
All ages	3405	596	518	529	402	360	307	209	179	130	86	89	4.2
Under 15	34	32	2	-	-	-	-	-	-	-	-	-	1.1
15-19	805	443	258	85	16	2	1	-	-	-	-	-	1.6
20-24	825	102	201	293	149	61	15	2	2	-	-	-	2.9
25-29	754	13	36	109	178	179	129	67	31	7	4	1	4.8
30-34	500	1	12	27	48	85	106	84	71	35	20	11	6.4
35-39	323	1	6	13	8	23	46	42	55	55	37	37	7.8
40-44	109	1	-	-	3	5	7	9	16	21	19	28	9.0
45 & above	55	3	3	2	-	5	3	5	4	12	6	12	8.0

Table 3.5: Distribution of Mothers Who Had Live Births in 1983 by
Age and Number of Surviving Children

Age (year)	Number of surviving children												Mean
	All	1	2	3	4	5	6	7	8	9	10	11+	
All ages	3405	761	654	541	487	348	254	164	103	63	20	10	3.4
Under 15	34	34	-	-	-	-	-	-	-	-	-	-	1.0
15-19	805	528	241	32	3	1	-	-	-	-	-	-	1.4
20-24	825	159	296	259	97	14	-	-	-	-	-	-	2.4
25-29	754	23	80	178	244	160	60	8	1	-	-	-	3.9
30-34	500	10	22	48	101	122	100	60	24	9	3	1	5.1
35-39	323	2	12	19	32	36	69	63	53	25	10	2	6.3
40-44	109	1	-	3	7	10	21	25	19	14	5	4	7.0
45 & above	55	4	3	2	3	5	4	8	6	15	2	3	6.9

Table 3.6: Distribution of Mothers Who Had Still Births and Miscarriages
in 1983 by Age and Number of Pregnancies

Age (year)	All	Number of pregnancies										
		1	2	3	4	5	6	7	8	9	10	11+
All ages	368	72	43	49	44	38	32	21	20	13	18	18
Under 15	3	3	-	-	-	-	-	-	-	-	-	-
15-19	94	52	23	13	5	1	-	-	-	-	-	-
20-24	81	12	19	23	17	5	3	1	-	-	1	-
25-29	73	4	-	8	16	19	17	5	2	1	1	-
30-34	56	1	-	3	5	11	8	8	5	3	5	7
35-39	37	-	-	2	1	2	3	5	7	6	6	5
40-44	17	-	-	-	-	-	-	1	5	2	4	5
45 & above	7	-	1	-	-	-	1	1	1	1	1	1

Table 3.7: Outcome of Pregnancies by Month, 1983

Month	Pregnancy outcomes			No. of live births		
	Miscar- riages	Still births	Live births*	Both sexes	Males	Females
All months	178	190	3405	3440	1739	1701
January	7	16	296	297	135	162
February	9	19	216	218	107	111
March	16	13	226	229	124	105
April	6	9	230	234	115	119
May	19	17	266	269	137	132
June	29	16	297	299	142	157
July	16	13	254	257	133	124
August	17	9	238	238	127	111
September	22	14	279	284	143	141
October	12	26	312	317	160	157
November	11	18	400	403	215	188
December	14	20	391	395	201	194

*For any multiple confinement, the outcome of pregnancy is recorded as live birth if one of the issues is live birth.

CHAPTER 4

MARRIAGE AND DIVORCE

Marriage refers to union of a male and a female which is established by civil or religious procedures. Divorce is dissolution of marital union through civil, religious or social procedures. Marriage rates (Table 4.3 and Fig. 4.1), age distribution of brides and grooms (Tables 4.3 and 4.4) and distribution of divorces by calendar month (Table 4.5 and Fig. 4.2), age and duration of marital union (Tables 4.6 and 4.7) are presented in this chapter.

Table 4.1: Marriage Rates (per 1000 population) by
Age and Sex, 1983

Age (year)	Males	Females
10-14	0.6	27.6
15-19	42.0	161.0
20-24	150.7	60.6
25-29	106.6	23.9
30-34	61.8	16.7
35-39	42.7	9.2
40-44	25.9	8.6
45-49	23.6	3.1
50-54	25.9	-
55-59	21.1	-
60-64	9.3	-
65 & above	22.9	-

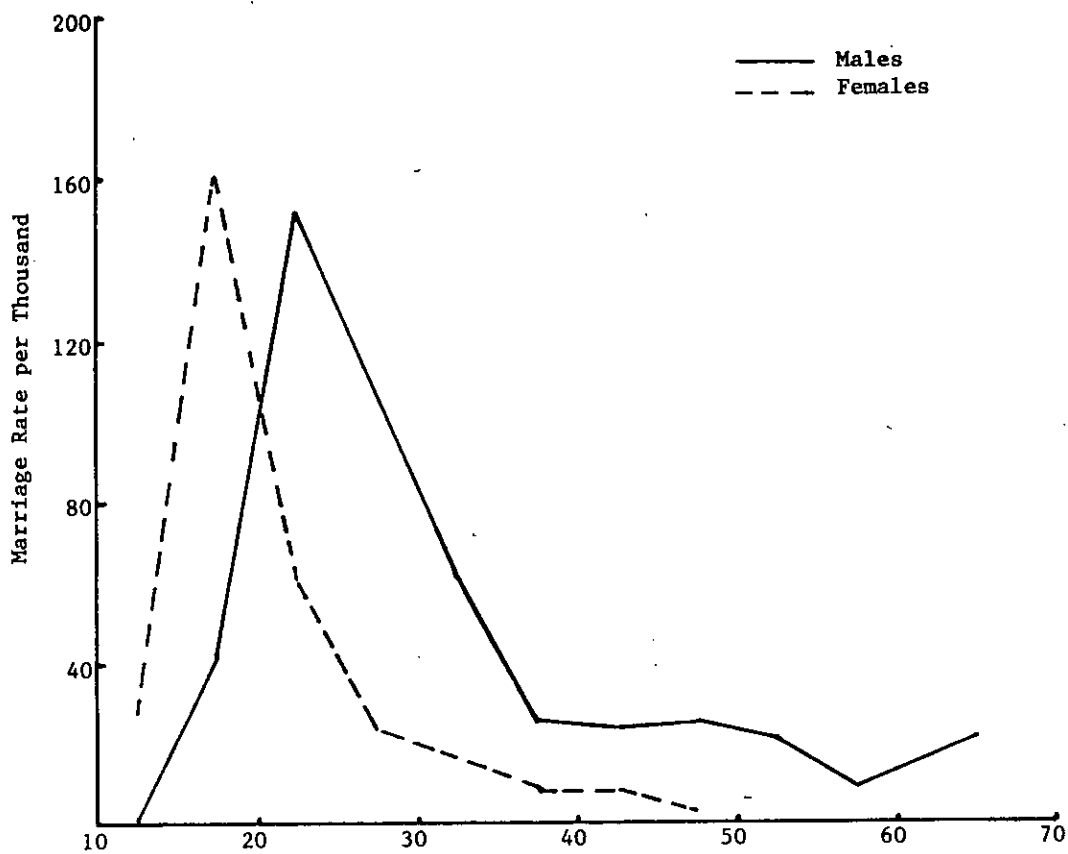


Fig. 4.1: Marriage Rates by Age and Sex, 1983

Table 4.2: Distribution of Marriages by Age of Partners, 1983

Age of wife (year)	All ages	Age of husband (year)						
		15-19	20-24	25-29	30-34	35-39	40-44	45 & above
All ages	1040	157	385	206	107	70	29	86
10-14	129	42	53	23	8	2	-	1
15-19	632	107	288	135	49	26	10	17
20-24	158	6	39	41	29	20	8	15
25-29	57	2	-	4	16	13	3	19
30-34	30	-	1	1	4	6	4	14
35 & above	34	-	4	2	1	3	4	20

Table 4.3: Brides' Age Distribution by Previous Marital Status, 1983

Age (year)	Previous marital status							
	All brides		Single		Widow		Divorced	
	No.	%	No.	%	No.	%	No.	%
All ages	1040	100.0	719	100.0	24	100.0	297	100.0
10-14	129	12.4	125	17.4	-	-	4	1.3
15-19	632	60.8	528	73.4	1	4.2	103	34.7
20-24	158	15.2	61	8.5	8	33.3	89	30.0
25-29	57	5.5	5	0.7	4	16.7	48	16.2
30-34	30	2.9	-	-	5	20.8	25	8.4
35-39	14	1.3	-	-	1	4.2	13	4.4
40-44	9	0.9	-	-	4	16.6	5	1.7
45 & above	11	1.1	-	-	1	4.2	10	3.4
Median age*	17		16		28		21	
Mean age*	19.0		16.6		30.2		24.0	
Standard deviation*	7.7		5.1		8.8		9.5	

*These indices were calculated from ungrouped data.

Table 4.4: Grooms' Age Distribution by Previous Marital Status, 1983

Age (year)	Previous marital status									
	All grooms		Single		Married		Widower		Divorced	
	No.	%	No.	%	No.	%	No.	%	No.	%
All ages	1040	100.0	590	100.0	196	100.0	53	100.0	201	100.0
10-14	3	0.3	3	0.5	-	-	-	-	-	-
15-19	157	15.1	136	23.0	2	1.0	-	-	19	9.5
20-24	385	37.0	319	54.1	14	7.1	2	3.8	50	24.9
25-29	206	19.8	110	18.6	26	13.3	8	15.1	62	30.8
30-34	107	10.3	17	2.9	50	25.5	5	9.4	35	17.4
35-39	70	6.7	1	0.2	44	22.4	7	13.2	18	8.9
40-44	29	2.8	-	-	21	10.7	5	9.4	3	1.5
45-49	25	2.4	-	-	12	6.1	9	17.0	4	2.0
50-54	19	1.8	-	-	8	4.1	4	7.5	7	3.5
55-59	17	1.6	-	-	9	4.6	8	15.1	-	-
60-64	4	0.4	-	-	2	1.0	2	3.8	-	-
65 & above	18	1.7	4	0.7	8	4.1	3	5.7	3	1.5
Median age*	24		21		35		47		26	
Mean age*	27.6		22.5		37.7		42.4		28.4	
Standard deviation*	11.4		7.3		12.3		12.4		9.2	

*These indices were calculated from ungrouped data.

Table 4.5: Marriages and Divorces by Calendar Month, 1983

Month	Number of marriages	Number of divorces
All months	1040	325
January	76	34
February	66	22
March	104	19
April	119	34
May	204	35
June	205	28
July	52	32
August	46	28
September	38	33
October	39	28
November	37	16
December	54	16

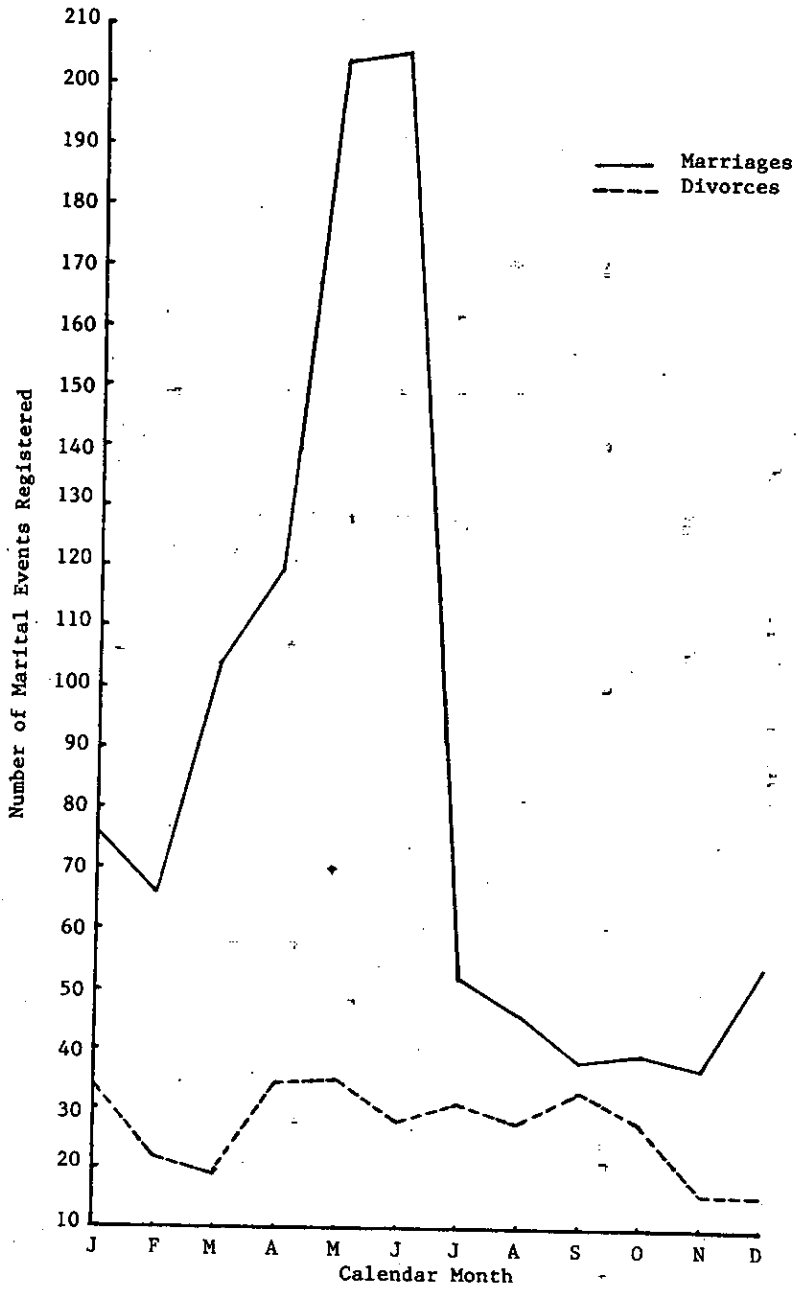


Fig. 4.2: Marriages and Divorces by Calendar Month, 1983

Table 4.6: Percentage Distribution of Divorces by Age of Wife and Duration of Marriage, 1983

Age (year)	All duration	Percent	Duration of marriage (month)						
			Under 6	6-11	12-23	24-35	36-47	48-59	60 & above
All ages	325	100.0	23.4	22.2	19.7	10.5	8.6	4.9	10.8
10-14	16	100.0	62.5	-	25.0	12.5	-	-	-
15-19	170	100.0	27.0	29.4	20.0	11.8	8.2	2.9	0.6
20-24	64	100.0	12.5	20.3	18.7	9.4	12.5	14.1	12.5
25-29	29	100.0	10.3	13.8	20.7	10.3	3.4	3.4	37.9
30-34	20	100.0	25.0	10.0	20.0	-	10.0	5.0	30.0
35-39	12	100.0	16.7	16.7	16.7	8.3	25.0	-	16.7
40 & above	14	100.0	14.3	7.1	14.3	14.3	-	-	50.0

Table 4.7: Percentage Distribution of Divorces by Age of Husband and Duration of Marriage, 1983

Age (year)	All duration	Percent	Duration of marriage (month)						60 & above
			Under 6	6-11	12-23	24-35	36-47	48-59	
All ages	325	100.0	23.4	22.2	19.7	10.5	8.6	4.9	10.8
15-24	102	100.0	33.3	24.5	28.4	10.8	2.9	-	-
25-29	78	100.0	14.1	20.5	17.9	17.9	16.7	7.7	5.1
30-34	50	100.0	22.0	28.0	10.0	4.0	10.0	6.0	20.0
35-39	28	100.0	28.6	17.9	21.4	3.6	7.1	10.7	10.7
40-44	12	100.0	8.3	16.7	8.3	-	16.7	8.3	41.7
45 & above	55	100.0	20.0	18.2	16.3	10.9	5.4	5.4	23.6

Table 4.8: Distribution of Divorces by Age of Partners, 1983

Age of female partner	All ages	Age of male partner						
		15-19	20-24	25-29	30-34	35-39	40-44	45 & above
All ages	325	27	75	78	50	28	12	55
10-14	16	3	9	3	1	-	-	-
15-19	170	24	53	47	20	12	2	12
20-24	64	-	10	22	14	10	3	5
25-29	29	-	-	4	12	1	3	9
30-34	20	-	2	1	2	4	3	8
35-39	12	-	1	1	-	1	1	8
40 & above	14	-	-	-	1	-	-	13

CHAPTER 5

MIGRATION

Migration is defined as individual or household movement into or out of the Teknaf DSS area for a period of at least six months. Migration within DSS area but between households is classified as internal movement. Information on internal movement is also collected on a separate form but has not been presented in the report. This chapter contains the tabulation of migration by age, sex, calendar month, cause of movement and places of origin and of destination. Migration rates by age, sex and direction of movement are also calculated.

Table 5.1: Migration by Age, Sex and Direction, 1983

Age (year)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	1578	837	741	1404	856	548
Under 10	400	207	193	280	141	139
10-19	373	129	244	416	217	199
20-29	341	183	158	368	256	112
30-39	254	183	71	204	151	53
40-49	101	72	29	80	57	23
50-59	65	39	26	33	23	10
60 & above	44	24	20	23	11	12

Table 5.2: Migration Rates (per 1000 population) by Age,
Sex and Direction, 1983

Age (year)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	24.5	25.9	23.1	21.8	26.5	17.1
Under 10	18.6	19.0	18.3	13.0	12.9	13.2
10-19	21.7	15.0	28.4	24.2	25.2	23.1
20-29	36.0	40.8	31.6	38.8	57.1	22.4
30-39	38.0	54.3	21.4	30.5	44.8	16.0
40-49	23.3	33.0	13.5	18.5	26.1	10.7
50-59	21.6	25.3	17.8	11.0	14.9	6.8
60 & above	20.0	19.8	20.3	10.5	9.1	12.2

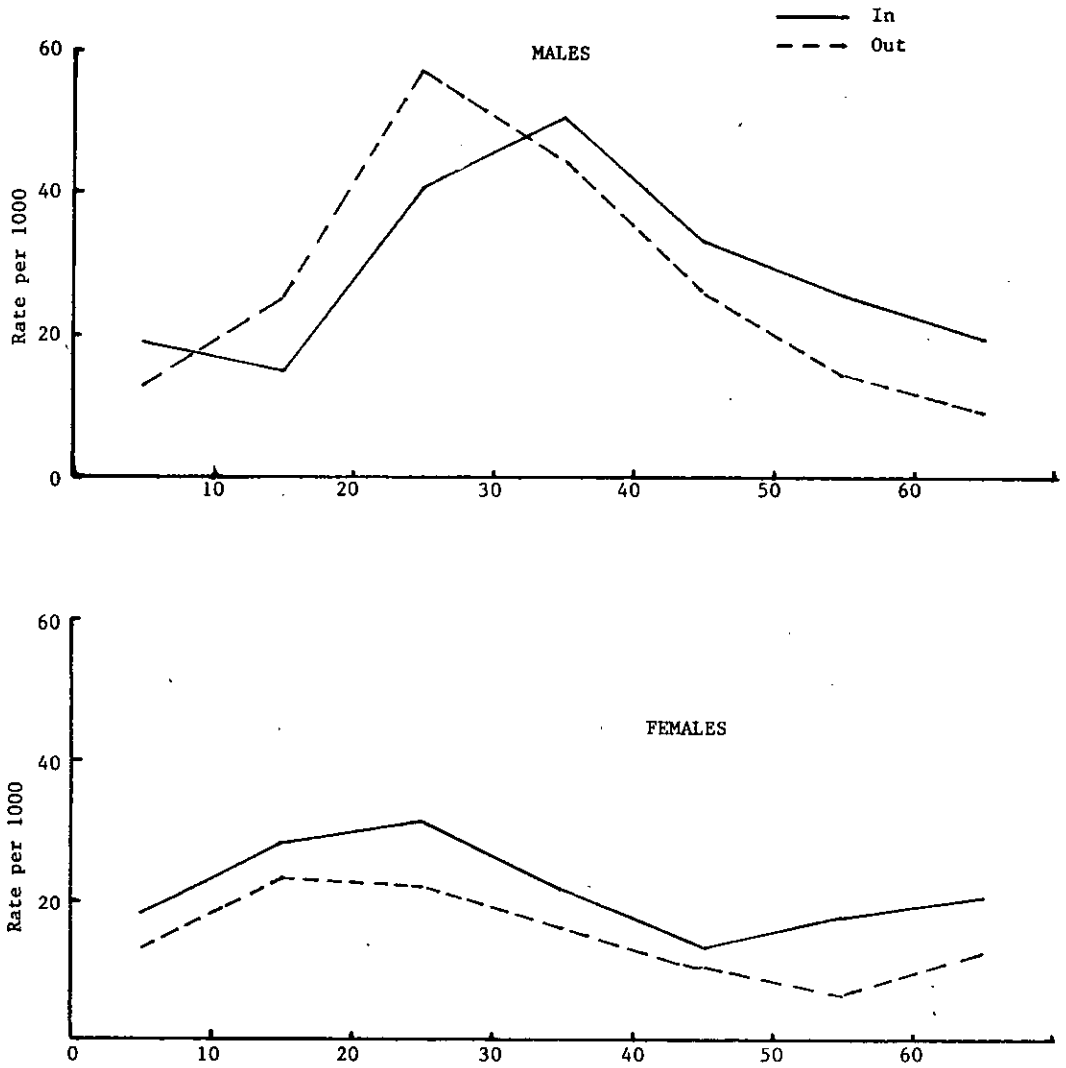


Fig. 5.1: Migration Rates by Age, Sex and Direction, 1983

Table 5.3: Migration by Sex, Calendar Month and Direction, 1983

Month	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All months	1578	837	741	1404	856	548
January	152	78	74	148	86	62
February	117	61	56	125	62	63
March	93	41	52	95	44	51
April	120	59	61	98	49	49
May	159	78	81	92	45	47
June	184	92	92	120	72	48
July	100	54	46	169	101	68
August	123	58	65	180	136	44
September	166	90	76	193	154	39
October	174	107	67	98	66	32
November	94	69	25	57	29	28
December	96	50	46	29	12	17

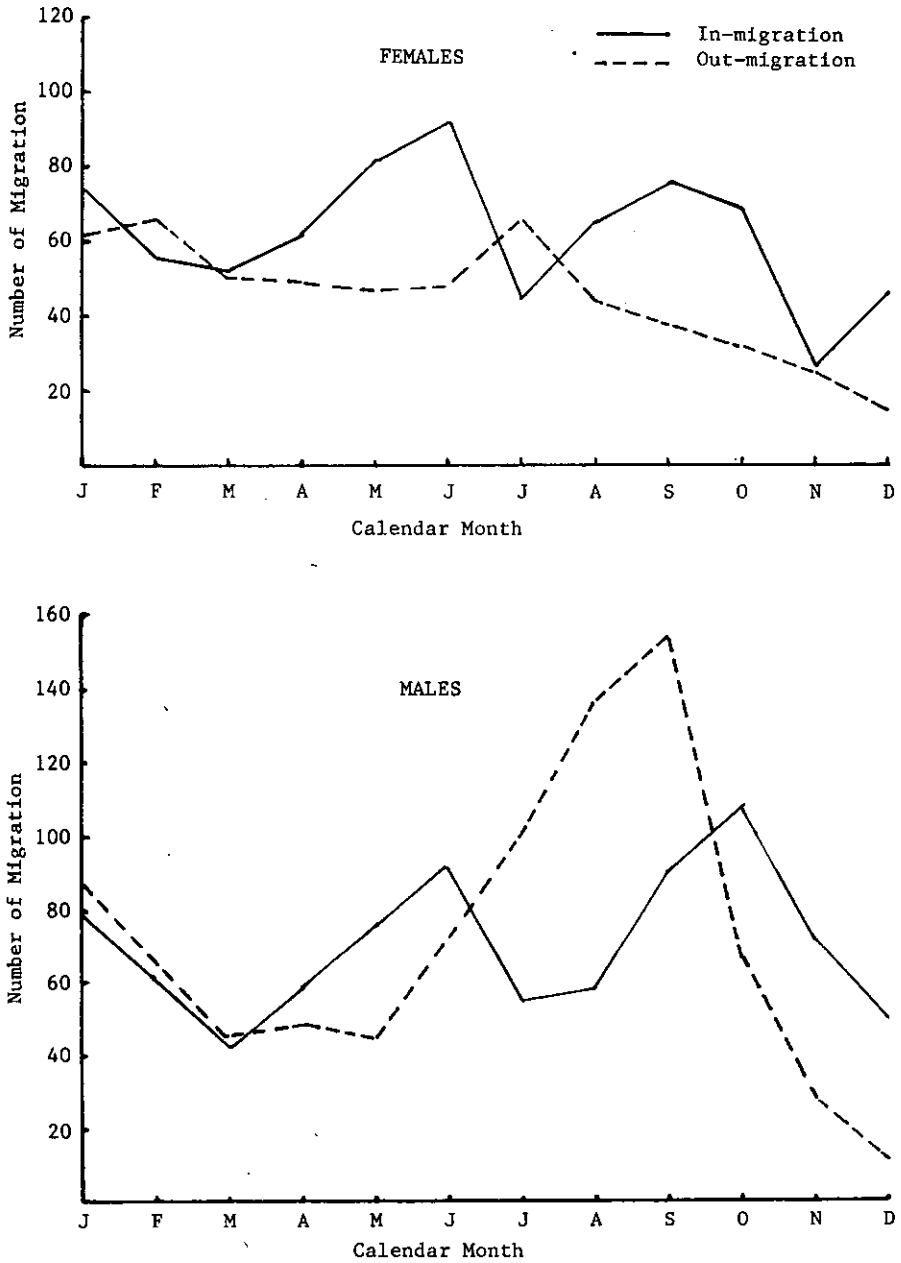


Fig. 5.2: Migration by Calendar Month, Sex and Direction, 1983

Table 5.4: Distribution of Migration by Sex, Cause and Direction, 1983

Cause of movement	In-migration				Out-migration			
	Males		Females		Males		Females	
	No.	%	No.	%	No.	%	No.	%
All causes	837	100.0	741	100.0	856	100.0	548	100.0
Marriage	71	8.5	155	20.9	7	0.8	71	13.0
Marital disruption	1	0.1	16	2.2	15	1.8	44	8.0
Service & business	45	5.4	21	2.8	53	6.2	4	0.7
Service abroad	-	-	-	-	435	50.8	17	3.1
Better living	98	11.7	87	11.7	66	7.7	70	12.8
Returning home	254	30.3	94	12.7	35	4.1	23	4.2
Joining relatives	40	4.8	47	6.3	33	3.8	104	19.0
Dependant	230	27.5	219	29.6	153	17.9	148	27.0
Joining spouse	63	7.5	69	9.3	22	2.6	42	7.7
Others	35	4.1	33	4.5	37	4.3	25	4.6

Table 5.5: Distribution of Migration by Sex and Places of Origin and of Destination, 1983

Location	To Teknaf from the places of origin				From Teknaf to the places of destination			
	Males		Females		Males		Females	
	No.	%	No.	%	No.	%	No.	%
All areas	837	100.0	741	100.0	856	100.0	548	100.0
Rural area	273	32.6	356	48.0	139	16.2	207	37.8
Urban area	102	12.2	96	12.9	87	10.2	97	17.7
Across the border*	206	24.6	209	28.2	62	7.2	71	12.9
Abroad**	256	30.7	80	10.8	565	66.0	173	31.6
Unknown	-	-	-	-	3	0.3	-	-

*The bordering country is Burma

**Abroad refers mainly to the oil-producing countries of the Middle-East

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Appendix A: Procedures of Estimation of Mid-Year Population

At the first stage, age structure of the population by single year on January 1, 1983, P_x^B was determined by (i) adding one year to the age recorded in census on January 1, 1982 and (ii) adding the age specific balance (Balance = in-migrants - deaths - out-migrants) in 1982 to the number of persons in (i). Or, in other words $P_x^B = P_{x-1}^C + (\text{Balance } 1982)_x$ where P_{x-1}^C is the population of age $x-1$ in census. Population below one year of age ($x=0$) was estimated as:

$$P_0^B = (\text{Births } 1982) + (\text{Balance } 1982)_0$$

Then, mid-year population on July 1, 1983, P_x^M was estimated as:

$$P_x^M = \frac{1}{2} [P_{x-1}^B + P_x^B] + \frac{1}{2} [(\text{Balance, } 1983)_x] \text{ and}$$

$$P_0^M = \frac{1}{2} [\text{Births } 1983 + P_0^B + (\text{Balance } 1983)_0]$$

Five year age groups beyond age 4, were then constructed.

Appendix B: Life Table Equations
(with usual symbols)

$$1. \quad n^q_x = \frac{n^m_x}{\frac{1}{n} + n^m_x \left\{ \frac{1}{2} + \frac{n}{12} (n^m_x - \ln C) \right\}}$$

$$2. \quad \ell_0 = 1.0$$

$$\ell_x = (1 - n^q_{x-n}) \ell_{x-n}$$

$$3. \quad L_0 = 0.128 \ell_0 + 0.872 \ell_1$$

$$L_1 = 0.410 \ell_1 + 0.590 \ell_2$$

$$L_i = 0.5 (\ell_i + \ell_{i+1}), \quad i = 2, 3, 4$$

$$n^L_x = \frac{n^d_x}{n^m_x} \quad \text{for } 5 \leq x \leq 75 \quad \text{and } n=5$$

$${}^\infty L_{80} = \frac{\ell_{80}}{{}^\infty m_{80}} \quad \text{for the last age group 80 and above}$$

$$4. \quad e^o_x = \frac{T_x}{\ell_x} \quad \text{where } T_x = \sum_{y=x}^{\infty} L_y$$

Note: As suggested in Shryock et al (1975): The Methods and Materials in Demography, Vol.2, p.444, US Dept. of Commerce, $\ln C$ has been taken (app.) as the value 0.095.